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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,306	12/29/2003	Qinghua Li	42P18462	7983

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EXAMINER	
PATEL, JAY P	

ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/748,306	LI ET AL.	
	Examiner	Art Unit	
	Jay P. Patel	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. In regards to claims 1, 13, 25 and 37, the phrase "at least one each for **at merely a subset**," is confusing.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 9, 13-16, 21, 25-28 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Walton et al. (US Publication 2005/0135295 A1).

3. In regards to claim 1, Walton shows in figures 50 and 51, a MIMO (one or more antenna(e)) PPDU frame 5000 (generating a packet for transmission) and SCHED PPDU 5100. In further regards, the frame 5100 comprises training symbols 5160 (including with the generated packet one or more training symbols, at least one each for at merely a subset of the number of antenna(e)). The frame 5100 also comprises a

SCHED frame 5180 (the packet generated for purposes other than the transmission of the training symbols).

In regards to claim 2, the frame 5180 also comprises a variable length data field 5080.

In regards to claim 3, The SCHED message is multiple poll message that assigns on or more AP-STA (access point to station), STA-AP and STA-STA (see page 28, paragraph 372).

In regards to claim 4, the SCHED message defines the schedule for a scheduled access period (SCAP) (see page 28, paragraph 373).

In regards to claim 9, Walton shows in figure 50, a MIMO PPDU frame 5000. A MIMO system has multiple transmit/receive antennas.

In regards to claim 13, Walton shows in figures 50 and 51, a MIMO (one or more antenna(e)) PPDU frame 5000 (generating a packet for transmission) and SCHED PPDU 5100. In further regards, the frame 5100 comprises training symbols 5160 (including with the generated packet one or more training symbols, at least one each for at merely a subset of the number of antenna(e)). The frame 5100 also comprises a SCHED frame 5180 (the packet generated for purposes other than the transmission of the training symbols).

In regards to claim 14, the frame 5180 also comprises a variable length data field 5080.

In regards to claim 15, The SCHED message is multiple poll message that assigns on or more AP-STA (access point to station), STA-AP and STA-STA (see page 28, paragraph 372).

In regards to claim 16, the SCHED message defines the schedule for a scheduled access period (SCAP) (see page 28, paragraph 373).

In regards to claim 21, Walton shows in figure 50, a MIMO PPDU frame 5000. A MIMO system has multiple transmit/receive antennas.

4. In regards to claim 25, Walton shows in figures 50 and 51, a MIMO (one or more antenna(e)) PPDU frame 5000 (generating a packet for transmission) and SCHED PPDU 5100. In further regards, the frame 5100 comprises training symbols 5160 (including with the generated packet one or more training symbols, at least one each for at merely a subset of the number of antenna(e)). The frame 5100 also comprises a SCHED frame 5180 (the packet generated for purposes other than the transmission of the training symbols).

In regards to claim 26, the frame 5180 also comprises a variable length data field 5080.

In regards to claim 27, The SCHED message is multiple poll message that assigns on or more AP-STA (access point to station), STA-AP and STA-STA (see page 28, paragraph 372).

In regards to claim 28, the SCHED message defines the schedule for a scheduled access period (SCAP) (see page 28, paragraph 373).

5. In regards to claim 37, Walton shows in figure 2, a wireless system apparatus including memory 255, which includes instructions (see page 4, paragraph 92) (a storage medium in which to store at least executable content). Walton shows in figures 50 and 51, a MIMO (one or more antenna(e)) PPDU frame 5000 (generating a packet for transmission) and SCHED PPDU 5100. In further regards, the frame 5100 comprises training symbols 5160 (including with the generated packet one or more training symbols, at least one each for at merely a subset of the number of antenna(e)). The frame 5100 also comprises a SCHED frame 5180 (the packet generated for purposes other than the transmission of the training symbols).

In regards to claim 38, the frame 5180 also comprises a variable length data field 5080.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 5-7, 10, 22 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al. (US Publication 2005/0135295 A1), in view of Weber et al. (US Patent 7212788 B2).

8. In regards to claims 5-7 and 10, Walton teaches all the limitations of parent claims 1-4 and 9. Walton however fails to particularly teach providing comparing a performance metric at a receiver to select the best transmit antenna, where the

performance metric is SNR. Weber on the other hand, teaches the above-mentioned limitations

In regards to claims 5-6 and 10, Weber teaches in prior art figure 1, a baseband/mixer unit 140 that includes processing for comparing the number of packet errors/SNR for each of antenna (providing a performance metric at a receiver when compared against other transmit antenna options) (see column 1, lines 42-46). The antenna with the least number of errors or the highest SNR is selected for broadcast (selecting the antenna with the best performance metric at the receiver, where the performance metric is SNR) (see column 1, lines 46-47).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the selection of a transmit antenna based on the received SNR at taught by Weber in the wireless transceiver system of Walton. The motivation to do so would be to allow for selection of an antenna with the best performance.

In regards to claim 7, Walton shows in figure 50, a MIMO PPDU frame 5000. A MIMO system has multiple transmit/receive antennas.

9. In regards to claim 22, Walton teaches all the limitations of parent claims 13-14 and 21. Walton however fails to particularly teach providing comparing a performance metric at a receiver to select the best transmit antenna, where the performance metric is SNR. Weber on the other hand, teaches the above-mentioned limitations

Weber teaches in prior art figure 1, a baseband/mixer unit 140 that includes processing for comparing the number of packet errors/SNR for each of antenna

(providing a performance metric at a receiver when compared against other transmit antenna options) (see column 1, lines 42-46). The antenna with the least number of errors or the highest SNR is selected for broadcast (selecting the antenna with the best performance metric at the receiver, where the performance metric is SNR) (see column 1, lines 46-47).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the selection of a transmit antenna based on the received SNR at taught by Weber in the wireless transceiver system of Walton. The motivation to do so would be to allow for selection of an antenna with the best performance.

10. In regards to claims 29-31, Walton teaches all the limitations of parent claims 25-26. Walton however fails to particularly teach providing comparing a performance metric at a receiver to select the best transmit antenna, where the performance metric is SNR. Weber on the other hand, teaches the above-mentioned limitations

In regards to claims 29-31, Weber teaches in prior art figure 1, a baseband/mixer unit 140 that includes processing for comparing the number of packet errors/SNR for each of antenna (providing a performance metric at a receiver when compared against other transmit antenna options) (see column 1, lines 42-46). The antenna with the least number of errors or the highest SNR is selected for broadcast (selecting the antenna with the best performance metric at the receiver, where the performance metric is SNR) (see column 1, lines 46-47).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the selection of a transmit antenna based on the received SNR at taught by Weber in the wireless transceiver system of Walton. The motivation to do so would be to allow for selection of an antenna with the best performance.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay P. Patel whose telephone number is (571) 272-3086. The examiner can normally be reached on M-F 9:00 am - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jpp 11/11/07

Jay P. Patel
Examiner
Art Unit 2619

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EDAN . ORGAD
SUPERVISORY PATENT EXAMINER